

Customer No.: 31561
Application No.: 10/604,409
Docket No.: 10672-US-PA

REMARKS

Present Status of the Application

The Office Action rejected claims 1-19 under 35 U.S.C. § 102(e) as being anticipated by Glenn (US 6,580,167). After considering the following remarks, a notice of allowance is respectfully solicited.

Response to Rejections under 35 U.S.C. § 102(e)

The Office Action rejected claim 1-19 under 35 U.S.C. § 102(e), as being anticipated by Glenn (US 6,580,167).

The present invention is directed to a stack chip package structure. The structure 200, as shown in Fig. 2A, includes a die 220, a thermal conductive block 230, and an adhesive layer 240. The bonding surface 232 of the thermal conductive block 230 is attached to the active surface of the die 220 through the adhesive layer 240. The bonding surface 232 of the thermal conductive block 230 further includes a central surface 232a and a plurality of peripheral surfaces 232b (in a magnified view of Fig. 2A), and the peripheral surfaces 232b surround the central surface 232a.

It should be noted that the bonding surface of the thermal conductive block includes a central surface and a plurality of peripheral surfaces surrounding the central surface, and the

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central surface and the peripheral surfaces are attached to the active surface of the die through the adhesive layer.

The feature is recited in claims 1, 7, and 12. For example, independent claim 1 recited the features.

With respect to claim 1, independent claim 1 recites the feature as follows:

1. A stack chip package structure, comprising:
 - a carrier with a carrier surface and a plurality of bonding pads, wherein the bonding pads are set up on the carrier surface;
 - a die with an active surface and a back surface, wherein the back surface of the die is in contact with the carrier surface of the carrier and the active surface of the die has a plurality of metal pads thereon;
 - an adhesive layer on the active surface of the die;*
 - a thermal conductive block with a bonding surface for attaching to the active surface of the die through the adhesive layer, wherein the bonding surface includes a central surface and a plurality of peripheral surfaces surrounding the central surface, wherein the peripheral surfaces are further away from the active surface of the die than the central surface relatively, and that the peripheral surfaces and the central surface are on non-coplanar planes;*
 - a plurality of conductive wires electrically connecting each metal pad to a corresponding bonding pad; and
 - a molding compound enclosing the die, the thermal conductive block and the conductive wires.
- (emphasis added)

Claim 7 and 12 recites the similar feature.

Glenn disclosed, "Thermally connected to upper surface 104U of electronic component 104 is an RF shield and heat sink 130, hereinafter referred to as heat sink 130. In this

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embodiment, a thermal pad 132 is located between upper surface 104U and heat sink 130. Thermal pad 132 is compliant thus compensating for any mismatch between heat sink 130 and electronic component 104. ..." (column 4, lines 40-46). Besides, Glenn further disclosed, "In this embodiment, upper surface 130U and lower surface 130L of heat sink 130 are parallel to one another. A central body portion 136 of heat sink 130 is defined by upper surface 130U and lower surface 130L of heat sink 130. Central body portion 136 is further defined by a lower, e.g., first, side 138 and an upper, e.g., second, side 140. Sides 138, 140 are perpendicular to upper surface 130U and lower surface 130L. ..." (column 5, lines 23-30).

According to the above mentioned, Glenn discloses the lower surface (130L) of the heat sink (130) is parallel to the upper surface (130U) and perpendicular to the sides (138, 140), and thermally connected to the upper surface (104U) of the electronic component (104). However, Glenn does not disclose the feature *"the bonding surface of the thermal conductive block includes a central surface and a plurality of peripheral surfaces surrounding the central surface, and the central surface and the peripheral surfaces are attached to the active surface of the die through the adhesive layer"* of the present invention.

Therefore, Glenn does not anticipate dependent claims 1,7, and 12, since Glenn does not disclose the similar feature of the claims. Consequently, Glenn does not anticipate dependent claims 2-6, 8-12, and 13-19 as a matter of law.

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Accordingly, Applicants respectfully submit that the grounds of rejection have been addressed and the rejection has been overcome. Reconsideration and withdrawal of the rejection are respectfully requested.

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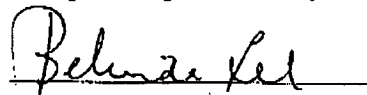
CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 1-19 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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Respectfully submitted,



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